





USER MANUAL

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Product Features



HD Images

1280X720 (HD)
 Codec : H.264



Voice Guidance supported

Voice guidance function for user's convenience



High Sensitivity GPS Receiver

• The information about the location, velocity and routing that is obtained from the GPS is indicated on Google Maps®.



Wide Angle of View

•130° viewing angle



Security LED

· Security LED activation in Parking Mode.



270° Camera Rotation

· Vehicle Cabin Viewing is also possible.



Parking Mode

Activated by motion or shock user selectable.



Battery Drain Prevention

· For extended Parking Surveillance.

Main Functions of Product



Voice Recording "ON / OFF"

- Privacy Protection
- "ON/OFF" Status Indicator LED



3-Phase Continuous Power Supply

 When the car is off, the parking mode begins automatically.



3-Axis Acceleration Sensor

 In case where excessive shocks occur to car, the 3-axis acceleration sensor automatically records the images.



microSD Memory card format

 The microSD memory card format is implemented in the product itself.



12V-24V Power



Shock (Event) Recording



Upgrade through microSD Memory Card



Sequential Deletion of Recorded Images



Continuous Recording



Function Setting

Before You Start

Before reading the user manual, first check the following information

Scope of Warranty and Liabilities

- This product is a road safety accessory and the manufacturer is not liable for any losses brought on by malfunctions, loss of data or any other forms of losses from using this product.
- •This product is an accessory designed for the specific purpose of recording and saving captured video footage of the areas near the vehicle. Certain functions may not be supported depending on the driving conditions and vehicle conditions. The firmware updates for improving performance may result in different performance by each product. The video may not be recorded depending on the conditions in which the device is used. Please use the device only for your reference. The recording may not take place depending on the status of the microSD card.
- •This device is designed to capture and save accident footages of the vehicle in which the product is installed in. However, it does not guarantee that every accident footage will be recorded. Accidents with very minor level of impact may not activate the impact sensor and the accident may not be recorded as an event footage.
- In vehicles that use smart keys, the batteries may discharge while in Parking Mode.

Please read the following safety information carefully. The information is provided to prevent potential injury or damage.

Classification (Degree of Danger)



Failure to follow these safety warnings could lead to a serious injury or death.



Failure to follow these cautions could lead to an injury or cause loss of property.



Warning



Do not operate the product while driving.



Do not disassemble, repair, or modify the product. This may cause fire, electric shock, there are no user servicable parts inside the device.



Do not cover or place anything on the product. This may cause the product to overheat and cause premature failure of components.



If the unit ceases to operate, unplug the device and contact your Snooper Technical on 01928 579579.



Use only the supplied power cable and windscreen bracket.

Do not modify the supplied power cable and/or windscreen bracket.



Do not expose the device to liquids.



Do not install the product in an area which is susceptible to moisture or dust.



Do not install product where it will obstruct your field of vision.



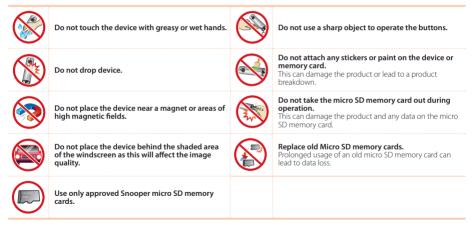
Do not install the device an an area which may affect the safe operation of the vehicle controls or safety equipment e.g area where Air Bags may be deployed.



The environmental temperature should not exceed the following limits (32°F to 122°F) , (0°C to 50°C) and keep the device away from high humidity.



Caution





Data Loss/Corruption (microSD Card Care)

Damage to the microSD card can result in data corruption or loss.

- microSD card is a highly sensitive piece of technology that can become defective due to changes in external environment or severe impact. Protect the card against impact and damage.
- The manufacturer will not be held responsible in the event of microSD card damage due to user negligence or external factors.
- We recommend using Snooper 16GB microSD cards

Causes of microSD Card Damage and Data Corruption

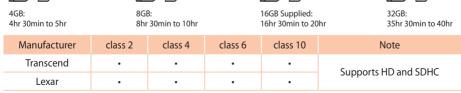
- External impact during installation/uninstallation.
- Abnormal disruption in power supply, such as sudden disconnection of the power cable while the black box is in use, can damage the microSD card.
- External impact on the product while it is in operation can also cause data corruption or damage the microSD card itself. To minimize loss and damage brought on by microSD card damage regularly check and back up your data.

Preserving Data on the micro SD Memory Card

Please pay attention to following information to minimize the possibility of losing recording data. The manufacturer is not responsible for missing data or defects caused by the user's mishandling.

- Protect micro SD Memory from any impact or misuse as this may cause data loss.
- Prior to the micro SD memory card replacement, check if micro SD memory card is compatible with the product.
- Properly turn off the device's power.
- · Backup important data regularly.
- Format the micro SD memory card 1~2 times a month.

Estimated recording time based on the micro SD Memory Card Capacity





GPS Use

- If you are using the product for the first time or using it after an extended period of non-use (3 days or longer), it will take longer than usual for the GPS to determine your current location.
- GPS signal strength is susceptible to weather conditions (rain, fog, etc.) and radio wave interference.
- •The ideal ambient temperature range for the GPS receiver is 0 °C 60 °C/32°F -140°F. Maintain this temperature range inside the vehicle, especially during summer and winter months.
- GPS reception may be low underneath an overpass, inside a tunnel, or with a high density of buildings nearby.
- The GPS receiver may not function properly in vehicles with special coating or tinting on the windshield or equipped with electro-magnetic wave-generating devices on board.
- GPS reception may be low or unavailable altogether near high-rise buildings or power cables due to the effects of high voltage.
- With poor GPS reception, it may take longer to determine the current location if the vehicle is moving.
- •Time and speed displays may not function properly in GPS shadow zones and under poor GPS reception conditions.

What's Included









Snooper® DVR2-HD Vehicle Drive Recorder

Mounting kit

Power Cable (Plug-in or Hard wire)

microSD Card 16gb (adapter included)











microSD memory card reader

Double-sided Tape

Quick Guide Manual

Cable clips

GPS Antenna

- The images are for illustration purposes only.
- The instructions can be modified without any prior notification to the users for the improvement of product performance.

1. Introduction to Product

Snooper DVR-2HD





- The images of these instructions can be different from those of real products.
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1. Introduction to Product

Snooper DVR-2HD



1	Security LED	Under the parking mode, it blinks, and while the car is parked, it is turned on under the event/motion recording.
2	GPS LED	The LED blinks while the GPS cable is connected, and is turned on when GPS signal reception begins. (Green Colour)
3	Event LED	It's turned on during event (shock) recording, motion recording. (Red Colour)
4	Power LED	While the power is connected, it blinks. After the connection of power, it is turned on. (Blue Colour)
5	Mic LED	The LED is turned on when the voice recording is in "ON" status.
6	Speaker LED	The LED is turned on when the speaker is in "ON" status.



- The images of these instructions can be different from those of real products.
- The instructions can be modified without any prior notification to the users for the improvement of product performance.

1. Introduction to Product

Name and Function of each part of Mounting Kit



	Name of Each Part	Function	
1	Mounting Kit	Used to attach and detach the Snooper to the vehicle.	
2 Fixation of Mounting Kit		Using double-coated tapes, the mounting kit can be fixed on the front glass of the inside of the car.	
3	Angle Control	Adjust the angle of the recorder.	

Precautions

Parts & Accessories

- Make sure you have all the parts and accessories before installing the DVR-2HD. ▶ Page 12
- If you are missing parts or accessories, contact your place of purchase.

Installation

The DVR position on the front windshield and its forward-facing angle greatly affect the video recording quality. Follow these instructions to get the best results:

- Install the mount on the central axis of the vehicle. (Ideal position behind rearview mirror).
- Do not use the DVR without the mount.
- Do not place any item between the DVR and the front windshield or cover up the Snooper.
- Secure the mount in place using the double-sided tape. However, make sure the windshield area where you will be attaching the mount to is free of dust and other forms of contaminants.

Snooper DVR-2 installation

Check the general environment and the position on which the body shall be fixed. For the notice regarding the installation, please see page 5.

This device should be installed on the upper center of the windscreen if you want to get the highest image quality.



Clean the windshield



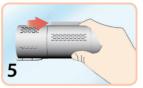
Remove the protective film from the double-sided tape.



Attach the bracket to the windshield (position to not obstruct the driver's view.)



Insert the microSD card into the card slot of the recorder.



Place the recorder into the bracket.



Adjust the angle of the recorder Use the adjustment angle to make sure that the lens is directed centrally and in the direction of the desired view to be recorded



Connect the power cable to the "PWR" input on the recorder.



Connect the DC end of the power cable into the car power outlet. You can hardwire your DVR into your vehicle. Find out more visit snooper.co.uk



Cable arrangement
Arrange the cables cleanly using a cable holder.



270° Rotation

When the recording of the inside of vehicle is required, you can start the recording after rotating the body.



- An alarm message appears when the microSD card is not normally recognized. (Voice message, LED)
- For the connection of continuous power supply cables (3-phase), we recommend you to refer to a qualified service center. (Black line: GND/White line: ACC/Red line: BAT(B+))

• For the products without GPS systems, the time setting is possible through the PC Viewer.

Power Connection and Continuous Recording



• The product is in "ON" status automatically when the power cable is connected.

Sound	Guiding comments after power connection – "Please Drive Safely" Guiding comments after boot completed - "Driving recording is beginning."
LED	Power LED (Blue) "ON"

• The product is in "OFF" status automatically when the power cable is disconnected.

	Guiding comments – "Now Shutting Down."
LED	All LEDs "OFF"

Event (Shock) Recording



- The recording mode begins automatically when shocks are perceived.
- Event recording time: when shock is perceived, the recording mode is applied for the time of 15 sec. before and after each shock. (30 sec. total)

Sound	Event alarming sound – "Ding-dong Ding-dong"
LED	Event LED (Red) "ON"



 When event happens, the recording mode is applied for the time of 15 sec. before and after each event. (30 sec. total)



Voice Recording ON/OFF



• Press the "MIC Button" to turn on and turn off the voice recording mode. (Initial setting: ON)

	Sound		Guiding comments - "Voice recording is beginning."
			Guiding comments - "Voice recording is stopping."
	LED	ON	MIC LED "ON"
		OFF	MIC LED "OFF"

SPK/Guiding Comment ON/OFF



 \bullet Press the "SPK Button" to turn on and turn off the function. (Initial setting: ON)

Sound		Guiding comments – "SPK is turned on."
	OFF	Guiding comments – "SPK is turned off."
	ON	SPK LED "ON"
LED		SPK LED "OFF"

Parking Mode



• If the continuous power is supplied, the parking mode starts automatically even when the car is off (ACC Off).

Sound	Guiding comments – "Parking mode is beginning."
LED	Under the parking mode, Security LED blinks. If Shock/Motion Recording starts with the car parked, Security LED is turned on. (N.B.: When the parking mode runs continuously, Security LED continues to blink.)

• When the car is on (ACC on), the parking mode stops automatically.

	Guiding comments – "Parking mode is stopping."
LED	Security LED "OFF"

•The recording modes during parking are applied according to the values set through the Snooper only viewer.

Continuous Parking	Continuous Recording, Shock Recording
Motion Detection Parking (Motion)	Motion Detection Recording, Shock Recording
Shock Detection Parking	Shock Recording

System Initialisation



• Function Setting Initialization: when SPK Button is pressed for 5 seconds. System Initialisation begins.

Button & Operation	Guiding Comment	LED Status
Press SPK Button for 5 seconds.	"Do you want to initialize the system?"	MIC LED & SPK LED Blinking
Confirmation of initialization > Press MIC Button.	"System Initialization is beginning."	MIC/SPK/GPS/Event LEDs Blinking
Cancellation of initialisation > Press SPK Button.	"System Initialization has been canceled."	
After the initialization is completed, the product reboots automatically.	"The system is restarting."	

 microSD memory card format: when MIC Button is pressed for 5 seconds, memory card format begins.





Explanation of LED Status and Buzzer Sound
The LED status and buzzer sound of each situation are as follows:

Classification	Situation	Guiding Comment	LED Status	Note
	GPS connection	"GPS system has been connected."	GPS LED Blinking	GPS cable connection after boot completion
GPS	GPS signals perception	No comment	GPS LED "ON"	Normal GPS signal perception
	"GPS system has been disconnected."	"GPS system has been disconnected."	GPS LED "OFF"	GPS cable removal with black box "ON"
	SD card error	"Check memory card."	MIC/SPK/GPS/ Event LEDs Blinking	microSD card not inserted, Error happened
SD card error	SD card removal	"Memory card has been removed."		SD card removal with black box "ON"
Firmware upgrade	Firmware upgrade	"A new firmware version is available." -> "Firmware update is beginning."		Firmware upgrade through microSD card
	Reboot after upgrade	"The system is restarting."	Power LED Blinking	Restart after firmware upgrade
Format recommendation	Periodical microSD card formatting (recommendation)	"Periodical microSD card format is recommended."	Power LED "ON"	Periodical microSD card format recommended: 1 time per month
Discharge breaking	Discharge breaking operation	Buzzer sound — "Beep"	Power LED Blinking (Every 5 seconds)	The discharge breaking is carried out if the voltage falls below the preset threshold for longer than 1 minute> At restarting the car, the operation is cancelled.
High-temperature prevention	High-temperature prevention operation	Buzzer sound — "Beep"	Power LED Blinking (Every 5 seconds)	The high-temperature prevention operation is performed if the preset prevention threshold is exceeded for longer than 10 seconds. If the temperature is maintained at 25° below the threshold for 10 seconds, the operation is cancelled

How to Remove microSD Memory Card

- 1 Turn off the car and unplug the power cable from the DVR-2HD.
- 2 Remove the microSD memory card from the card insertion slot by pressing the card.



• Removing the microSD card while the Snooper is turned on will cause data corruption.

Software Installation

The user can playback recorded video through the video player with a compatible computer. Windows XP, Vista and 7.



Connect the SD memory card to a computer.
- Combine the SD memory card with USB gender and connect the USB gender to a computer.



Double-click snooper.exe on the micro SD memory card or download the latest program from the download menu at www.snooperneo.co.uk



Designate an installation folder for the software and then click the 'Install' button.



After the installation is completed, click the 'Close' button.



- Make sure insert you the correct side of micro SD memory card to the USB gender.
- The Classic View can now be executed from the installation location or the desktop.

Running Program





- Connecting the microSD memory card to the computer
 Insert the microSD card into the USB gender and then connect it to the
 USB terminal of the computer.
- 2 Running Program
 Run the launcher program clicking the program icon of the background.



- $\bullet \ \ \textit{While inserting the microSD card into the USB gender, check whether the front and rear directions of the card are accurate.}$
- The launcher program runs on the computer.



• The viewer and launcher program are coupled to each other while running.

Snooper Viewer



	Name of Each Part	Function
1	Main Display	The images captured by the camera are played.
2	3-Axis Sensor Value	The shock values "X," "Y" and "Z" of shock sensor are indicated.
3	Autometer	The routing velocity of the car is indicated. (Products coupled with GPS system)
4	GPS Reception	${\sf GPS}\ {\sf reception}\ {\sf status}\ {\sf is}\ {\sf indicated}.\ ({\sf Products}\ {\sf coupled}\ {\sf with}\ {\sf GPS}\ {\sf system})$
5	Replay Progress Indicator	The progress status of the video being played is indicated.
6	Location Coordinate Values	The information about the latitude and longitude from GPS is shown. (Products coupled with GPS system)
7	Main/Sub Screen Conversion	The main video screen and sub video screen are converted.
8	Sub Display	The images captured by the rear camera are played (Not applicable).
9	Vehicle Location Indicator Map	The vehicle location information from Google Maps $^{\! \bullet}$ is shown internet connection required
10	Opening Files	The searching and opening of the file to be replayed can be performed.



- When you use the map functions, your computer must be connected to the Internet. To be able to use the functions, you have to install Microsoft Internet Explorer 7 or later.
- Regarding the map function, while the image recording during driving is done, maps may not be displayed due to bad GPS reception.
- The map function is supported only for the models with a built-in GPS module.

Control of Snooper Viewer

	me of Each Part	Function
‡	Setting	The operating environment of the Snooper is set.
Ō	Screenshot	It is used to capture images immediately and store them. (PNG, JPG)
	Printer	Images are outputted by printer.

Control of Snooper Viewer

Name of Each Part	Function	
Replay	The file containing the selected images is replayed.	
Pause	The images being played are stopped for a while.	
Stop	The images being played are stopped and the play goes back to the beginning.	
Previous File The file prior to that containing the images that are being played is replayed		
1 Frame Backward	The image goes 1 frame backward.	
1 Frame Forward The image goes 1 frame forward.		
Next File The image just after that being played is played.		
Enlargement The image being played is enlarged.		
Reduction The enlarged image is reduced.		
1:1 Ratio The enlarged image is reduced in the original ratio.		
Movement	The enlarged image is moved to a different position that the user wants.	
Image Rotation	The image being played is rotated upward and downward.	

Fetching Recorded Image Data

Select the route through which the images you want have been stored after pressing the button.



Checking Driving Route (GPS)

The GPS location information is shown on the map along with the routing information.





GPS Location Information

- This function is supported only for the products with an exterior GPS.
- This function works only when the Internet is connected.

Other Operation Functions

Full-size Image: If you right-click on the screen, the image is enlarged to the full size.



Setting Program



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		Resolution	The selection of maximum and minimum resolution of product is possible.
	1	Image Quality (Definition)	The video recording quality is set.
	Image/ Sound	FPS (Frames Per Second)	FPS stands for Frames Per Second: The frames that can be recorded in a second. (Low: 15 fps, Medium: 24 fps, High: 30 fps)
		Voice Recording	Voice & Sound recording function "ON/OFF"
		Speaker Volume	The volume of buzzer sound and voice guidance sound is set.
		Time Setting	The recording time of the Snooper is set up. Time can be set just to the time on the computer by retrieving the current time. (Check whether the time on the computer is the standard time.)
	Time	DST (Daylight Saving Time)	Under the DST system, clocks are adjusted forward one hour. In the regions where the DST system is practiced, time can be set automatically through this function. When the preset date arrives, the time of product is moved ahead by 1 hour.
		Standard Time Zone	The selection of standard time zone of each nation can be done through the function.
		Shock Sensitivity	The sensitivity of shock sensing sensor is set.
		Number of Event Files	The number of event files that can be stored is adjusted.
		Parking Mode	The parking mode is set through the function.
	Function	Motion Sensitivity	The motion perception sensitivity during parking can be adjusted
		Battery Discharge Blocking Voltage	The battery discharge blocking voltage during parking mode can be set.
		Speed Unit	The speed unit can be chosen.
		Security LED	The operating status of security LED during parking is set.
	Viewer	Language	The change of language shown on the viewer is possible.
	Setting	Speed Unit	The selection of speed unit shown on the viewer can be done.

Clock



Used to set the unit's clock.

Select Retrieve Time to use the computer's system clock settings.

GMT Setting (Time Zone)

The standard time zone corresponding to the region of each country is selected.



microSD Memory Card Storage Folder

Folder Name	Note
REC	• The files of continuous driving recording and parking recording, including motion recording, are stored. - Continuous driving recording: per 1 min. - Motion parking recording: per 30 sec. / Continuous parking recording: per 1 min. E.g.) Continuous driving recording: 20120412_111535_l.avi, Parking recording: 20120412_111535_P.avi
EVENT	Shock recording and event recording during parking are stored. Event (Shock) recording: per 30 sec. (Basic capacity: 10-40 files stored) Event recording during parking: per 30 sec. E.g.) Event during continuous driving recording: 20120412_111535_l.avi, Event during parking recording: 20120412_111535_P.avi
UPDATE	The folder is used for the latest firmware update. In the folder is stored the "Text (*.txt)" file through which you can check the firmware version.

Firmware Upgrade

- Connect the microSD memory card to the computer.
- 2 Create the "UPDATE" folder in the microSD card.
- 3 Copy the firmware file into the "UPDATE" folder.
- Connect the microSD card to the DVR-2HD and connect the power.
- 5 Once the power is connected, the firmware is upgraded, the body reboots and the upgrade process is completed.



- Do not forcibly turn off the power or remove the microSD card while the firmware is being upgraded. The system can
 malfunction.
- The file system for the microSD card shall necessarily be the FAT16 or FAT32. Other file systems including the NTFS are not supported.

5. Product Specifications & Product Certification Process

Product Specifications

Classification		DVR-2HD	
	Image Sensor	2-megapixel	
	Channel	1 channel	
Camera	Angle of View	130°	
	Image Compression Mode	H.264	
	Resolution	1280X720(HD)	
	Frame	30 fps max.	
	Recording Mode	Continuous/Event/Parking Mode	
Recording	Event Mode	Perception of 3-axis shock sensor	
	Event Recording Mode	Applied for 15 sec. before and after shock (30 sec. total)	
	Parking Mode	Motion detection, 3-axis shock sensor	
GPS	Velocity, Location, Google Maps®	Supported	
Storage	Basic Capacity	microSD memory card 8GB or 16GB	
Storage	Maximum Capacity	32GB	
Audio	Input	Built-in MIC	
Audio	Output	Speaker (Voice guidance)	
Power	Main Power	DC 12-24V, 200mA	
1 01101	Sub Power (Built-in)	Supercapacitor	
Others	Voice Guidance	Supported	
Culcis	Security LED	Supported	



- The firmware update of this product is possible. Therefore, if the user needs to update the firmware for the quality improvement of product, the update is possible. The update files can be downloaded on our company's home page. (www.snoperneo.c.uk)
- The specifications of this product can be modified without any prior notification to the users for the improvement of product performance.

5. Product Specifications & Product Certification Process

Product Certification Process



KCC

Certificate of Broadcasting and Communication Equipment



CE

Certificate of Safety and Quality for the European Market



FCC

Certificate of Federal Communications Commission of the USA



RoHS

Restriction of Hazardous Substances Directive

6. Troubleshooting

If you are having trouble with this product, please check the following troubleshooting information before requesting servicing. Contact Snooper Technical Support only if the problem persists after implementing the measures described below.

Problem	Solution	
Video recordings are not being saved to the microSD card.	• Remove the microSD card and try inserting it again.	
The Snooper is unable to read the memory card.	Format the microSD card and try again. If the microSD card is old (expired), replace it with a new one.	
What happens if the microSD card becomes full?	• Existing recording data are overwritten with new data, starting with the oldest.	
The recordings have poor picture quality.	Check to see if the protective film has been removed from the camera lens. Check to see if the camera lens is dirty. Check to see if the windshield is dirty or has obstacles such as dark tinting.	
The DVR is not working.	Check the power connection. Check to see if you are using an original power cable from the manufacturer.	



• For further assistance and troubleshooting, please call Snooper Technical on 01928 579579.





